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EXAMINER	
LAO, LUN YI	
ART UNIT	**PAPER NUMBER**
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SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/24/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/782,953	Applicant(s) SHAHOIAN, ERIK J.	
	Examiner LUN-YI LAO	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 06 February 2007.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 66-109 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 66-109 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 23 February 2004 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date See Continuation Sheet.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :3/21/2006, 10/5/2004 and 2/23/2004.

DETAILED ACTION

Election/Restrictions

1. The argument for the restriction requirement is persuasive and claims 66-109 are examined.

Specification

2. The continuation data in the first sentence(s) of the specification is improper because the application No. 09/585,741, now Patent No. 6,697,043 is not a continuation-in-part of application No. 09/456,887, now Patent No. 6,211,861, which is a continuation-in-part of U.S. Application No. 09/103,281, filed June 23, 1998, now US Patent No. 6,088,019 since there is no common inventor in 10/782,953 and 09/456,887 or 10/782,953 and 09/103,281 applications(see MPEP201.08).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the

> applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 67-72 and 78-109 are rejected under 35 U.S.C. 102(e) as being anticipated Rosenberg(6,211,861).

As to claims 67-72 and 78-109, Rosenberg et al teaches a device comprising: a sensor(62) configured to output a sensor signal associated with one of a movement and a position of a housing(50) to which the sensor(62) is coupled; an actuator(18) coupled to the housing, the actuator(18) being configured to output a rotary force based on a haptic feedback signal received from a processor(110), the haptic feedback signal being based on the sensor signal(see figures 3b-4; column 2, lines 24-63; column 5, lines 48-52; column 6, lines 19-35; column 7, lines 45-68; column 8, lines 1-5; column 10, lines 6-46; column 11, lines 32-68; column 12, lines 1-46 and column 16, lines 1-10); and a flexure having a plurality of flexible joints(e.g., joins in a shaft(72)), the flexure being coupled to the actuator(18) and the housing(50), the flexure being configured to translate the rotary force to a linear motion of the flexure, the flexure operative to output haptic feedback based on the rotary force(see figures 2, 3b-3c; column 10, lines 6-46).

As to claims 89, 100 and 105, Rosenberg teaches a sensor(54 or 112) coupled to the housing, the sensor(54 or 112) output a sensor signal associated with one of a movement and a position of the housing; an actuator(18) assembly including a stationary portion(e.g. 66) is mounted to the housing and an actuator portion(e.g. 67 or

72073) is movable respect to the housing in response to the sensor signal(see figures 1-2, 3b-4; abstract; column 2, lines 44-63; column 8, lines 6-23; column 10, lines 6-46; column 11, lines 31-68 and column 12, lines 1-24) and a mechanism including a flexure having a first flex joint(a flex joint connected the shaft(72) to the main body of the actuator(70)) and a second flex joint(a flex joint connected the shaft(72) to the arm(73) and the mass(74)) , the mechanism coupled to the actuator portion(140, 142) of the actuator assembly to the housing such that movement of the actuator portion(e.g., 73, 74) operates to provide haptic feedback to the housing in the form of an inertial force that is transferred to the housing by the stationary portion of the actuator assembly(see figures 3B, 3C and column 10, lines 6-46).

As to claims 68 and 102, Rosenberg teaches the linear motion is along an axis(z axis) perpendicular to a base(68) of the housing(32), the based configured to contact a planar support surface(22)(see figures 2, 3b-3c and column 10, lines 6-46).

As to claim 69, Rosenberg teaches the actuator(18) including an inertial mass(e.g. 74), the inertial mass(64 or 74) being configured to moved linearly with the linear motion of the flexure, the haptic feedback including an inertial force(see figures 2, 3b-3c; column 8, lines 6-18 and column 10, lines 6-46).

As to claim 70, Rosenberg teaches a portion of the flexure(68) is coupled to a movable contact member(a mouse 12 or 68), the movable contact member being received user input(see figures 1-2, 3b-3c; column 3, lines 65-68; column 4, lines 20-33; column 5, lines 47-52; column 8, lines 6-23 and column 10, lines 6-46).

As to claim 71, Rosenberg teaches a portion of flexure(see figures 1, 3b-3c; column 8, lines 60-68 and column 10, lines 5-34) is coupled to a button(16a, 16b) coupled to the housing(50), the button(16a, 16b) configured to receive user input(see figures 1-3b; column 3, lines 47-64 and column 9, lines 4-20).

As to claim 72, Rosenberg teaches a rotating member(90) coupled to a rotating shaft(84) of the actuator(66) and to at lest one flex joint(94) from the plurality of flex joints(94, 98, 112)(see figure 3; column 10, lines 24-68 and column 11, lines 1-20).

As to claims 78 and 97, Rosenberg teaches the actuator is driven bi-directionally(clockwise or anticlockwise, 75), the haptic feedback having at lest one of a pulse and a vibration(see figures 2, 3b; abstract; column 2, lines 23-43 and column 10, lines 6-15).

As to claims 80-84 and 98-99, Rosenberg teaches the linear motion or pulse associated with a cursor or a graphical representation display(see figures 1, 5; abstract; column 1, lines 45-65; column 3, lines 47-64; column 15, lines 5-65; column 16, lines 11-45; column 18, lines 47-68 and column 19, lines 1-17).

As to claim 85, Rosenberg teaches the haptic feedback having a pulse or vibration(see figure 3b; and column 10, lines 6-13).

As to claim 86, Rosenberg teaches the sensor(52) includes a ball(54, mouse)(see figure 2 and column 7, lines 31-44).

As to claim 87, Rosenberg teaches an optical sensor(112)(see figures 1, 4; and column 13, lines 16-30).

As to claims 88 and 103, Rosenberg teaches the actuator(18) is positioned such that a rotating shaft of the actuator(18) is rotated about an axis orthogonal to a base of the housing(see figures 1-2, 3c and column 10, lines 24-34).

As to claim 90, Rosenberg teaches the actuator(18 or 70) moved in approximately a linear motion with respect to the housing(see figures 1-2, 3B-3C; abstract and column 10, lines 6-46).

As to claim 91, Rosenberg teaches the actuator(18 or 70) for outputting a rotary force(see figures 3B-3C and column 10, lines 6-46).

As to claims 92, 102, 104 and 106, Rosenberg teaches the linear motion is along a Z-axis perpendicular to a base of the housing, the based configured to contact a planar support surface(see figures 1, 2, 3B-3C; abstract and column 10, lines 6-46).

As to claim 94, Rosenberg teaches mechanical rotary bearings(see figures 3B and 3C).

As to claims 79, 98 and 109, Rosenberg teaches the flexure includes at lest one stop(78) to prevent rotation of a shat of the actuator(76) past a desired portion of a full revolution(see figure 3C and column 10, lines 25-34).

As to claim 101, Rosenberg teaches the haptic feedback is associated with a haptic feedback signal received by the interface device from a processor(14)(see figures 1-2, 4; abstract; column 15, lines 5-68 and column 16, lines 1-45).

As to claim 107, Rosenberg teaches the inertial force output by the actuator is a rotary force(torque)(see figures 3B-3C and column 10, lines 6-46).

As to claim 108, Rosenberg teaches a rotating shaft(e.g. 72) of the actuator(18) is coupled to a flexure arm(73) including at lest one flex joint, the flexure arm being configured to be coupled to a portion of the interface device housing(50), the interface device housing(50) being flexibly coupled to a carriage, the carriage being coupled to the actuator housing(see figures 2, 3B; column 8, lines 49-68 and column 9, lines 1-3).

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 67-109 are rejected under 35 U.S.C. 102(e) as being anticipated by Shahoian et al(6,184,868).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As to claims 67-109, Shahoian et al teach a device comprising: a sensor configured to output a sensor signal associated with one of a movement and a position of a housing to which the sensor is coupled(see figures1, 6, 10a-11; column 5, lines 61-

68; column 6, lines 1-3; column 7, lines 23-44; column 20, lines 16-68 and column 21, lines 1-5); an actuator(124, 140, 142) coupled to the housing, the actuator(124, 140, 142) being configured to output a rotary force based on a haptic feedback signal received from a processor(16)(see figures 1, 2, 5b; column 5, lines 61-68; column 6, lines 1-3; column 7, lines 24-44; column 8, lines 8, lines 1-28; column 14, lines 39-68 and column 15, lines 1-5), the haptic feedback signal being based on the sensor signal(see figures 1, 2, 5b; column 5, lines 61-68; column 6, lines 1-3; column 7, lines 24-44; column 8, lines 8, lines 1-28); and a flexure having a plurality of flexible joints(132a, 132b, 134a, 134b), the flexure being coupled to the actuator(e.g., 124, 140, 142) and the housing, the flexure being configured to translate the rotary force to a linear motion of the flexure, the flexure operative to output haptic feedback based on the rotary force(see figures 1, 4, 5a-5b; column 3, lines 30-52; column 14, lines 39-68; column 15, lines 1-5).

As to claims 89, 100 and 105, Shahoian et al teach a sensor coupled to the housing, the sensor output a sensor signal associated with one of a movement and a position of the housing; an actuator assembly including a stationary portion(75) is mounted to the housing and an actuator portion(142 or 140) is movable respect to the housing in response to the sensor signal(see figures 1-2, 4, 5a-5b; column 5, lines 60-68; column 6, lines 1-3; column 11, lines 26-58; column 14, lines 39-68 and column 15, lines 1-5) and a mechanism(122) including a flexure having a first flex joint(134) and a second flex joint(134), the mechanism coupled to the actuator portion(140, 142) of the actuator assembly to the housing such that movement of the actuator portion operates

to provide haptic feedback to the housing in the form of an inertial force that is transferred to the housing by the stationary portion of the actuator assembly(see figures 2-3, 5B; column 12, lines 27-50; column 14, lines 39-68 and column 15, lines 1-5).

As to claim 105, Shahoian et al teach the interface device(10 or 12) in response to rotation of the rotating shaft(138) caused by the control singal and relative motion imparting an inertial force to the interface device(10 or 12) toe thereby provide hatpic feedback(see figures 1-5B, 10A, column 5, lines 61-68; column 6, lines 1-30; column 8, lines 1-44 column 14, lines 39-68 and column 15, lines 1-5).

As to claims 68, 90-92, 102 and 106, Shahoian et al teach the linear motion is along an axis perpendicular to a base of the housing, the based configured to contact a planar support surface(see figures 1, 10a-11; column 4, lines 5-17 and column 21, lines 46).

As to claim 69, Shahoian et al teach the actuator including an inertial mass, the inertial mass being configured to moved linearly with the linear motion of the flexure, the haptic feedback including an inertial force(see figures 1, 5a-5b; column 14, lines 39-68 and column 15, lines 1-5).

As to claims 70 and 93, Shahoian et al teach a portion of the flexure(132a, 132b, 134a, 134b) is coupled to a movable contact member(e.g, 78a, 78b), the movable contact member being received user input(see figures 1-2, 5a-5b; column 14, lines 39-68; and column 15, lines 1-5).

As to claim 71, Shahoian et al teach a portion of flexure(132a, 132b, 134a, 134b) is coupled to a button(buttons or switches) coupled to the housing, the button configured to receive user input(see figures 1-2, 10a-11 and column 6, lines 19-24).

As to claims 72 and 95, Shahoian et al teach a rotating member coupled to a rotating shaft(138) of the actuator(e.g., 124, 140, 142) and a first arm member(130a) and a second arm member(130b) coupled to the actuator at lest one flex joint from the plurality of flex joints((132a, 132b, 134a, 134b)(see figure 5b; column 14, lines 39-68 and column 15, lines 1-5).

As to claims 73, 90 and 108, Shahoian et al teach the flexure having a first arm member(130a) and a second arm member(130b), the first arm member(130a) and the second arm member(130b) being coupled to a linear moving portion of the flexure to a stationary portion of the flexure, the first arm(130a) and the second arm member(130b) are coupled to the linear moving portion by at least one flex joint from the plurality of flex joints(e.g. 134a)(see figure 5b figure 5b; column 14, lines 39-68 and column 15, lines 1-5).

As to claims 74-76, Shahoian et al teach the flexure having a central member(134a, 134b), a first branch member(130a) and a second branch member(130b), the central member of the flexure is coupled to a rotating shaft(138) of the actuator, the first branch member(130a) and the second branch member(130b) arranged in Y-configuration, at least one the flex joints form the plurality of flex joints being disposed on each of the first branch member and the second branch member, at

least one flex joint from the plurality of flex joints disposed on the central member(see figure 5b figure 5b; column 14, lines 39-68 and column 15, lines 1-5).

As to claims 77, Shahoian et al teach the rotating member(136, 137, 138) coupled to the housing by at a first flex joint and a second flex joint and the actuator(124, 140, 142) being coupled to the housing by the first arm member(130a) and a second arm member as least two flex joints(see figure 5b; column 14, lines 39-68 and column 15, lines 1-5).

As to claims 78 and 97, Shahoian et al teach the actuator is driven bi-directionally(left and right or up and down), the haptic feedback having at lest one of a pulse and a vibration(see figures 2, 5b and column 8, lines 1-61).

As to claims 79, 96 and 109, Shahoian et al teach the flexure includes at least one stop to prevent motion of a shaft of the actuator past a desired portion of a full revolution(see figures 3-5b and column 13, lines 30-39).

As to claims 80-84 and 98-99, Shahoian et al teach the linear motion or pulse associated with a cursor or a graphical representation display(see figures 1, 10A; column 2, lines 44-63; column 3, lines 53-68; column 7, lines 45-53 and column 18, lines 26-59).

As to claim 85, Shahoian et al teach the haptic feedback having a pulse or vibration(see figures 1-2, 10A; column 8, lines 1-44 and column 12, lines 27-68).

As to claim 86, Shahoian et al teach the sensor includes a ball(mouse)(see column 2, lines 50-63 and column 20, lines 24-28).

As to claim 87, Shahoian et al teach an optical sensor(see figure 1; column 2, lines 50-53; column 5, lines 60-68 and column 6, lines 1-3).

As to claims 88 and 103, Shahoian et al teach the actuator is positioned such that a rotating shaft(138) of the actuator(124, 140, 142) is rotated about an axis orthogonal to a base of the housing(see figures 1 and 5B).

As to claims 94 and 107, Shahoian et al teach mechanical rotary bearings(137, 138, 140, 142)(see figure 5B; column 14, lines 39-68 and column 15, lines 1-5).

As to claim 101, Shahoian et al teach a haptic feedback signal received by the interface device from a processor(16)(see figures 1, 10A; column 5, lines 61-68; column 6, lines 1-30 and column 8, lines 1-44).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 67-85 and 89-109 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rodomista et al(6,985,133) in view of Rosenberg et al(5,701,140).

As to claims 67-85 and 89-109, Rodomista et al teach a device comprising: a sensor(100 or 88 or 96)) configured to output a sensor signal associated with one of a movement and a position of a housing(12) to which the sensor(100 or 88 or 96) is

coupled(see figures 1, 4A-6; column 13, lines 4-68 and column 14, lines 1-28); an actuator(e.g. 76, 78) coupled to the housing, the actuator(20, 14, 16) being configured to output a rotary force based on a haptic feedback signal received from a processor(computer)(see figures 1, 4A-6; column 1, lines 20-28 and lines 59-68; column 13, lines 55-68 and column 14, lines 1-37); and a flexure having a plurality of flexible joints(plastic joints, 20, 22, 34, see figure 1 and column 12, lines 50-58), the flexure being coupled to the actuator(20, 14, 16) and the housing, the flexure being configured to translate the rotary force to a linear motion of the flexure, the flexure operative to output haptic feedback based on the rotary force(see figures 1, 4A; column 11, lines 59-68 and column 12, lines 1-3).

Rodomista et al fail to disclose a haptic feedback signal being based on the sensor signal.

Rosenberg et al teach a device comprising sensors(13A, 13B, 16A, 16B, 19A, 19B); a plurality of flexible joints(12, 15, 18) and a haptic feedback signal being based on a sensor signal(see figures 1-4B; abstract; column 3, lines 31-68 and column 4, lines 1-32). It would have been obvious to have modified Rodomista et al with the teaching of Rosenberg, so as to provide a clear picture a user how the hatpic feedback signal being generated.

As to claims 89, 100 and 105, Rodomista et al as modified teach a sensor(100 or 88 or 96) coupled to the housing, the sensor output a sensor signal associated with one of a movement and a position of the housing; an actuator(20, 22, 34) assembly including a stationary portion is mounted to the housing and an actuator portion(e.g. 76,

78) is movable respect to the housing in response to the sensor signal(see figures 1, 4A, 4B; column 1, lines 20-28 and lines 59-68; column 4, lines 28-56; column 13, lines 55-68 and column 14, lines 1-37); and a mechanism including a flexure having a first flex joint and a second flex joint to the arm(24) and the mass(see figures 4a-4B; column 11, lines 59-68 and column 12, lines 1-39), the mechanism coupled to the actuator portion(76, 78) of the actuator assembly to the housing(12) such that movement of the actuator portion(76, 78) operates to provide haptic feedback to the housing in the form of an inertial force that is transferred to the housing by the stationary portion of the actuator assembly(see figures 1, 4A-4B; column 11, lines 51-68 and column 12, lines 1-39).

As to claims 68 and 102, Rodomista et al as modified teaches the linear motion(e,g, UP and Down) is along an axis perpendicular to a base of the housing(12), the based configured to contact a planar support surface(see figures 1, 4A-4B; column 11, lines 59-68; column 12, lines 1-19 and Rosenberg's figure 1).

As to claim 69, Rodomista et al as modified teach the actuator(20, 22, 34) including an inertial mass, the inertial mass being configured to moved linearly with the linear motion of the flexure, the haptic feedback including an inertial force(see figures 2, 3b-3c; column 8, lines 6-18 and column 10, lines 6-46).

As to claim 70, Rodomista et al as modified teach a portion of the flexure is coupled to a movable contact member(stylus, 40), the movable contact member being received user input(see figures 1, 4A, 4B; column 11, lines 51-68; column 12, lines 1-3; column 13, lines 55-68; and column 14, lines 1-28).

As to claim 71, Rodomista et al as modified teach a portion of flexure(see figures 1, 3b-3c; column 8, lines 60-68 and column 10, lines 5-34) is coupled to a button(e, g. 98) coupled to the housing(12), the button(98) configured to receive user input(see figures 1, 6; column 14, lines 4-68; Rosenberg' column 4, lines 34-55).

As to claim 72, Rodomista et al as modified teach a rotating member(20) coupled to a rotating shaft of the actuator(20) and to at lest one flex joint from the plurality of flex joints(see figures 1, 4A, 4B).

As to claim 73, Rodomista et al as modified teach the flexure having a first arm member(24) and a second arm member(30), the first arm member(24) and the second arm member(30) coupled to a linear moving portion of the flexure to a stationary portion of the flexure(e.g. a housing holding the actuator(20)), the first arm member(24) and the second arm member(30) are coupled to the linear moving portion by at least one flex joint(e.g. 22) from the plurality of flex joints(see figures 1, 4A-4B; column 11, lines 59-68 and column 12, lines 1-3).

As to claim 74, Rodomista et al as modified teach the flexure includes a central member(26), a first branch member(24) and a second branch member(30), the central member(26) of the flexure is coupled to a rotating shaft of the actuator(20), the first branch member(24) and the second branch member(30) arranged in a substantially Y-configuration(see figure 1).

As to claim 75, Rodomista et al as modified teach the flexure includes a central member(26), a first branch member(24) and a second branch member(30), the central member of the flexure is coupled to a rotating shaft of the actuator(20), the first branch

member(24) and the second branch member(30) arranged in a substantially Y-configuration, at least one of the flex joints(20) from the plurality of flex joints being disposed on each of the first branch member and the second branch member, at least one flex joint from the plurality of flex joints is disposed on the central member(26)(see figure 1).

As to claim 76, Rodomista et al as modified teach the flexure includes a rotating member(e.g. 22) coupled to the housing by at least one flex joint(22) from the plurality of flex joints(20. 22. 34), and a first arm member(24) and a second arm member(30), the first arm member(24) and the second arm member(30) coupling the actuator(20, 22, 24) to the housing by at least one flex joint from the plurality of flex joints(20. 22. 34)(see figures 1 and 4A-4B).

As to claim 77, Rodomista et al as modified teach the flexure includes: a rotating member(e.g. 22) coupled to the housing by at least one flex joint(22) from the plurality of flex joints(20. 22. 34), and a first arm member(24) and a second arm member(30), the first arm member(24) and the second arm member(30) coupling the actuator(20, 22, 24) to the housing by at least one flex joint from the plurality of flex joints(20. 22, 34), the rotating member(22) being coupled to the housing by a first flex joint(the joint coupled the rotation member(22) to the arm(23)) and a second flex joint(the joint coupled the rotation member(22) to the arm(30)) from the plurality of flex joints, the actuator(e.g. 22) being coupled to the housing by the first arm member(24) and the second arm member(30), the first arm member(24) and the second arm member(30)

including at least two of the flex joints(the joints for connecting the rotation member(22) the arms(24, 30)) from the plurality of flex joints(see figures 1 and 4A-4B).

As to claims 78 and 97, Rodomista et al as modified teach the actuator is driven bi-directionally(clockwise or anticlockwise), the haptic feedback having at lest one of a pulse and a vibration(see figures 1, 4A-4B).

As to claim 85, Rodomista et al as modified teach the haptic feedback having a pulse or vibration(see figures 1, 7; column 14, lines 38-68 and column 15, lines 1-29).

As to claims 80-84 and 98-99, Rodomista et al as modified teaches the linear motion or pulse associated with a cursor or a graphical representation display(see figures 7-8B; column 14, lines 38-68; Rosenberg's 1-4B; abstract; column 1, lines 13-25 and lines 56-65; column 2, lines 18-28; column 3, lines 1-14; and column 7, lines 10-24).

As to claims 88 and 103, Rosenberg teaches the actuator(18) is positioned such that a rotating shaft of the actuator(18) is rotated about an axis orthogonal to a base of the housing(see figures 1-2, 3c and column 10, lines 24-34).

As to claim 90, Rodomista et al teach the actuator(20, 22, 34) moved in approximately a linear motion with respect to the housing(see figures 1, 4A, 4B; and column 11, lines 59-68 and column 12, lines 1-3).

As to claim 91, Rodomista et al as modified teach the actuator(10, 22, 34) for outputting a rotary force(see 1, 4A, 4B; and column 11, lines 59-68 and column 12, lines 1-3)..

As to claims 92, 102, 104 and 106, Rodomista et al as modified teach the linear motion(UP and DOWN) is along a Z-axis perpendicular to a base of the housing, the based configured to contact a planar support surface(see figures 1, 4A-4B; column 11, lines 59-68; column 12, lines 1-19 and Rosenberg's figure 1).

As to claim 94, Rodomista et al as modified teaches mechanical rotary bearings(see figure 1 and Rosenberg's figure 1).

As to claims 79, 98 and 109, Rodomista et al as modified teach the flexure includes at lest one stop to prevent rotation of a shaft of the actuator(20) past a desired portion of a full revolution(see figures 1 and 4A-4B).

As to claim 101, Rodomista et al as modified teach the haptic feedback is associated with a haptic feedback signal received by the interface device from a processor(computer)(see column 1, lines 21-29 and lines 59-68; and Rosenberg's figures 1-4B; column 1, lines 13-25 and lines 55-65; column 2, lines 18-28; column 3, lines 1-15; and column 7, lines 10-25).

As to claim 107, Rodomista et al as modified teach the inertial force output by the actuator is a rotary force(torque)(see figures 1, 4A, 4B and column 11, lines 50-68 and column 12, lines 1-3).

As to claim 108, Rodomista et al as modified teach a rotating shaft of the actuator(20) is coupled to a flexure arm(24) including at lest one flex joint, the flexure arm being configured to be coupled to a portion of the interface device housing(12), the interface device housing(20) being flexibly coupled to a carriage, the carriage being coupled to the actuator housing(see figures 1, 4A-4B).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tierling et al(US 20020030663) teach a mouse for providing haptic feedback.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lun-yi Lao whose telephone number is 571-272-7671. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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April 17, 2007
L. Y. Lao
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